

ENGINEER'S ESTIMATE OF PROBABLE COSTS
ORTON SLOUGH DRAINAGE DISTRICT, WOODBURY COUNTY
OPTION 1: PROPOSED RELIEF TILE PARALLEL TO EXISTING TILE

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1.	Mobilization	1	JOB	34,250.00	\$34,250.00
2.	2000D Reinforced Concrete Pipe, 54" Dia.	6,785	LF	95.50	\$647,967.50
3.	Furnish & Install CMP Tile Extension, 60" Dia.	20	LF	92.00	\$1,840.00
4.	54" Dia. R.C.P. Elbow Section, Fabrication Only	3	EA	600.00	\$1,800.00
5.	Drop Inlet Structure, 72" Dia.	1	EA	5,200.00	\$5,200.00
6.	Existing Tile Cross Connection	1	EA	1,000.00	\$1,000.00
7.	Topsoil Strip, Stockpile, Respread	37,695	SY	0.50	\$18,847.50
8.	Tile Trench Stabilization and Cradling Rock	300	TN	25.00	\$7,500.00
9.	Fence Cuts	4.00	EA	235.00	\$940.00

Estimated Construction Subtotal: **\$719,345.00**

Engineering Services:

Design Survey	\$6,550.00
Research, Preliminary Design & Informal Hearings	\$30,000.00
Design Plans, Engineer's Report & Formal Hearings	\$19,000.00
Final Plans, Specifications & Bidding	\$14,750.00
Construction Administration	\$12,300.00
Construction Staking & Observation	\$15,600.00
Wetland Determination, Permits & Mitigation	\$3,500.00
Legal & Auditor Services, Publications, Misc.	\$1,200.00
Crop Damages (7.8 AC Corn @ \$745.00/AC)	\$5,850.00
Contingencies	\$71,900.00

Improvement Project Cost Subtotal : **\$899,995.00**

Other Potential District Costs:

Annexation	\$2,000.00
Reclassification	\$18,060.00
Project Warrant Interest	\$84,200.00
Wetland Mitigation - 50% District for 4.4 AC	\$44,000.00

TOTAL ESTIMATED PROJECT COST, OPTION 1 **\$1,048,255.00**

Average Cost per Assessed Acre (2394 acres)	\$437.87
Average Cost per Watershed Acre (2761 acres)	\$379.66
Average Cost per Watershed Acre for 10 years	\$37.97

Other Non-District Costs:

1.	Concrete Pipe, 3750D, Trenchless, 54" Dia. @ STA 49+50 - I-29	170	LF	650.00	\$110,500.00
2.	Concrete Pipe, 3750D, Trenchless, 54" Dia., STA 24+50 - D-51	70	LF	650.00	\$45,500.00

3.	Wetland Mitigation - 50% Landowner for 4.4 AC				\$44,000.00
----	---	--	--	--	-------------

Probable Non-District Cost: **\$200,000.00**

**ENGINEERS ESTIMATE OF PROBABLE COSTS
ORTON SLOUGH DRAINAGE DISTRICT, WOODBURY COUNTY
OPTION 2: PROPOSED NEW TILE ALIGNMENT**

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1.	Mobilization	1	JB	39,300.00	\$39,300.00
2.	2000D Reinforced Concrete Pipe, 60" Dia.	6,785	LF	108.00	\$732,780.00
3.	Furnish & Install CMP Tile Extension, 72" Dia.	20	LF	116.00	\$2,320.00
4.	60" Dia. R.C.P. Elbow Section, Fabrication Only	2	EA	800.00	\$1,600.00
5.	Drop Inlet Structure, 84" Dia.	1	EA	7,500.00	\$7,500.00
6.	Junction Structure, 8'x8' Box	1	EA	9,500.00	\$9,500.00
7.	60" Dia. R.C.P. 45° Elbow Section	4	EA	1,000.00	\$4,000.00
8.	Topsoil Strip, Stockpile, Respread	37,695.00	SY	0.50	\$18,847.50
9.	Tile Trench Stabilization and Cradling Rock	350.00	TN	25.00	\$8,750.00
10.	Fence Cuts	4.00	EA	235.00	\$940.00

Estimated Construction Subtotal: \$825,537.50

Engineering Services:

Design Survey	\$7,200.00
Research, Preliminary Design & Informal Hearings	\$30,000.00
Design Plans, Engineer's Report & Formal Hearings	\$19,000.00
Final Plans, Specifications & Bidding	\$16,000.00
Construction Administration	\$13,400.00
Construction Staking & Observation	\$17,000.00
Wetland Determination, Permits & Mitigation	\$3,500.00
Legal & Auditor Services, Publications, Misc.	\$1,200.00
Crop Damages	
7.8 AC, Corn @ \$745.00/AC	\$5,850.00
Contingencies	\$78,600.00

Improvement Project Cost Subtotal \$1,017,287.50

Other Potential District Costs:

Annexation	\$2,000.00
Reclassification	\$18,060.00
Project Warrant Interest	\$91,500.00
Wetland Mitigation - 50% District for 4.4 AC	\$44,000.00

TOTAL ESTIMATED PROJECT COST, OPTION 2: \$1,172,847.50

Average Cost per Assessed Acre (2394 acres)	\$489.91
Average Cost per Watershed Acre (2761 acres)	\$424.79
Average Cost per Watershed Acre for 10 years	\$42.48

Other Non-District Costs:

1.	Concrete Pipe, 3750D, Trenchless, 60" Dia. @ STA 49+50 - I-29	170	LF	830.00	\$141,100.00
2.	Concrete Pipe, 3750D, Trenchless, 60" Dia., STA 24+50 - D-51	70	LF	830.00	\$58,100.00
3.	Wetland Mitigation - 50% Landowner for 4.4 AC				\$44,000.00

Probable Non-District Cost : \$243,200.00

**ENGINEER'S ESTIMATE OF PROBABLE COSTS
ORTON SLOUGH DRAINAGE DISTRICT, WOODBURY COUNTY
OPTION 3: PROPOSED OPEN DITCH**

MAIN OPEN DITCH

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1.	Mobilization	1	JOB	17,300.00	\$17,300.00
2.	Topsoil Strip, Stockpile, Respread	122,617.00	SY	0.50	\$61,308.50
3.	Open Ditch Excavation	59,319	CY	2.95	\$174,991.05
4.	Spoil Bank Leveling (Two Sides)	68.60	STA	125.00	\$8,575.00
5.	Furnish & Install CMP Metal Surface Drain Pipe				
a.	15" Dia.	120	LF	24.00	\$2,880.00
b.	18" Dia.	200	LF	28.00	\$5,600.00
c.	24" Dia.	120	LF	33.00	\$3,960.00
6.	Furnish & Install 60" CMP, Outlet Pipe	60	LF	96.00	\$5,760.00
7.	Fence Removal & Disposal	4.00	STA	55.00	\$220.00
8.	Open Ditch Fertilizing & Seeding	68.60	STA	55.00	\$3,773.00
9.	Roadside Spoil Seeding & Fertilizing	66.20	STA	55.00	\$3,641.00
10.	Furnish & Install Silt Screen Fence	1	JOB	2,500.00	\$2,500.00
Estimated Main Open Ditch Subtotal :					\$290,508.55

WATER QUALITY MEASURES

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
11.	Furnish & Install Detention Chambers				\$25,000.00
12.	Remove Existing Tile				\$1,200.00
13.	Furnish & Install Tile Cap to Existing Tile				\$500.00
14.	Furnish & Install 60" Dia. Drop Riser				\$5,500.00
15.	Furnish & Install 36" Dia. Tile to Open Ditch				\$32,130.00
16.	Furnish & Install 42" Dia. CMP Tile Outlet				\$1,100.00
17.	Furnish & Install Rock Riffles				\$2,500.00
18.	Channel Sediment Trap Excavation				\$4,194.90
Estimated Water Quality Measures Subtotal :					\$72,124.90

Estimated Construction Subtotal: \$362,633.45

Engineering Services:

Design Survey	\$3,300.00
Research, Preliminary Design & Informal Hearings	\$30,000.00
Design Plans, Engineer's Report & Formal Hearings	\$19,000.00
Final Plans, Specifications & Bidding	\$7,400.00
Construction Administration	\$6,200.00
Construction Staking & Observation	\$7,800.00
Wetland Determination, Permits & Mitigation	\$3,500.00
Legal & Auditor Services, Publications, Misc.	\$1,200.00
Crop Damages	
Main Open Ditch (25.3 AC of Work Limit, Corn @ \$745.00/AC)	\$18,848.50
Contingencies	\$35,900.00

Improvement Project Cost Subtotal \$495,781.95

**ENGINEER'S ESTIMATE OF PROBABLE COSTS
ORTON SLOUGH DRAINAGE DISTRICT, WOODBURY COUNTY
OPTION 3: PROPOSED OPEN DITCH
MAIN OPEN DITCH**

Other Potential District Costs:

Right-of-Way

MAIN OPEN DITCH

Taken R.O.W. (11.31 AC @ \$8,500.00/AC) \$96,135.00

Easement R.O.W. (4.15 AC @ \$660.00/AC) \$2,739.00

Engineering \$4,200.00

Annexation \$2,000.00

Reclassification \$18,060.00

Geotechnical Investigation \$7,500.00

Project Warrant Interest \$46,500.00

Wetland Mitigation - 50% District for 4.4 AC \$44,000.00

TOTAL ESTIMATED PROJECT COST, OPTION 3 **\$716,915.95**

Average Cost per Assessed Acre (2394 acres) **\$299.46**

Average Cost per Watershed Acre (2761 acres) **\$259.66**

Average Cost per Watershed Acre for 10 years **\$25.97**

Other Non-District Costs:

1.	Culvert, Concrete Pipe, 3750D, Trenchless, 60" Dia., STA 49+50 - I-29 - Iowa Department of Transportation	170	LF	830.00	\$141,100.00
2.	Culvert, Concrete Pipe, 3750D, Trenchless, 60" Dia., STA 24+50 - D-51 - Secondary Roads	70	LF	830.00	\$58,100.00
3.	Wetland Mitigation - 50% Landowner for 4.4 AC				\$44,000.00

ENGINEER'S ESTIMATE OF PROBABLE COSTS
ORTON SLOUGH DRAINAGE DISTRICT, WOODBURY COUNTY
OPTION 3A: PROPOSED MAIN OPEN DITCH & LATERAL NO. 1

MAIN OPEN DITCH

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1.	Mobilization	1	JOB	21,000.00	\$21,000.00
2.	Topsoil Strip, Stockpile, Respread	122,617	SY	0.50	\$61,308.50
3.	Open Ditch Excavation	59,319	CY	2.95	\$174,991.05
4.	Spoil Bank Leveling (Two Sides)	68.60	STA	125.00	\$8,575.00
5.	Furnish & Install CMP Metal Surface Drain Pipe				
a.	15" Dia.	120	LF	24.00	\$2,880.00
b.	18" Dia.	200	LF	28.00	\$5,600.00
c.	24" Dia.	120	LF	33.00	\$3,960.00
6.	Furnish & Install 60" CMP, Outlet Pipe	60	LF	96.00	\$5,760.00
7.	Fence Removal & Disposal	4.00	STA	55.00	\$220.00
8.	Open Ditch Fertilizing & Seeding	68.60	STA	55.00	\$3,773.00
9.	Roadside Spoil Seeding & Fertilizing	66.20	STA	55.00	\$3,641.00
10.	Furnish & Install Silt Screen Fence	1.00	JOB	2,500.00	\$2,500.00

Estimated Main Open Ditch Subtotal :

\$294,208.55

LATERAL NO. 1

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
11.	Topsoil Strip, Stockpile, Respread	49,900.00	SY	0.50	\$24,950.00
12.	Open Ditch Excavation	12,139	CY	2.95	\$35,810.05
13.	Spoil Bank Leveling (Two Sides)	29.94	STA	125.00	\$3,742.50
14.	Furnish & Install 42" CMP, Driveway Culvert, STA 83+75	60	LF	65.00	\$3,900.00
15.	Open Ditch Fertilizing & Seeding	29.94	STA	55.00	\$1,646.70
16.	Roadside Spoil Seeding & Fertilizing	28.94	STA	55.00	\$1,591.70

Estimated Lateral No. 1 Subtotal :

\$71,640.95

WATER QUALITY MEASURES

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
17.	Furnish & Install Detention Chambers				\$25,000.00
18.	Remove Existing Tile				\$1,200.00
19.	Furnish & Install Tile Cap to Existing Tile				\$500.00
20.	Furnish & Install 60" Dia. Drop Riser				\$5,500.00
21.	Furnish & Install 36" Dia. Tile to Open Ditch				\$32,130.00
22.	Furnish & Install 42" Dia. CMP Tile Outlet				\$1,100.00
23.	Furnish & Install Rock Riffles				\$2,500.00
24.	Channel Sediment Trap Excavation				\$4,194.90

Estimated Water Quality Measures Subtotal :

\$72,124.90

Estimated Construction Subtotal:

\$437,974.40

Engineering Services:

Design Survey	\$4,000.00
Research, Preliminary Design & Informal Hearings	\$30,000.00
Design Plans, Engineer's Report & Formal Hearings	\$19,000.00
Final Plans, Specifications & Bidding	\$9,000.00
Construction Administration	\$7,500.00
Construction Staking & Observation	\$9,500.00
Wetland Determination, Permits & Mitigation	\$3,500.00

**ENGINEER'S ESTIMATE OF PROBABLE COSTS
ORTON SLOUGH DRAINAGE DISTRICT, WOODBURY COUNTY
OPTION 3A: PROPOSED MAIN OPEN DITCH & LATERAL NO. 1**

Legal & Auditor Services, Publications, Misc.	\$1,200.00
Crop Damages	
Main Open Ditch (25.3 AC of Work Limit, Corn @ \$745.00/AC)	\$18,848.50
Lateral No. 1 (10.3 AC of Work Limit, Corn @ \$745.00/AC)	\$7,673.50
Contingencies	\$43,800.00
Improvement Project Cost Subtotal	\$591,996.40

Other Potential District Costs:

Right-of-Way	
MAIN OPEN DITCH	
Taken R.O.W. (11.31 AC @ \$8,500.00/AC)	\$96,135.00
Easement R.O.W. (4.15 AC @ \$660.00/AC)	\$2,739.00
Lateral No. 1	
Taken R.O.W. (4.42 AC @ \$8,500.00/AC)	\$45,900.00
Easement R.O.W. (2.26 AC @ \$660.00/AC)	\$1,518.00
Engineering	\$5,000.00
Annexation	\$2,000.00
Reclassification	\$24,060.00
Geotechnical Investigation	\$7,500.00
Project Warrant Interest	\$55,000.00
Wetland Mitigation - 50% District for 4.4 AC	\$44,000.00
TOTAL ESTIMATED PROJECT COST, OPTION 3A:	\$875,848.40

Average Cost per Assessed Acre (2394 acres)	\$365.85
Average Cost per Watershed Acre (2761 acres)	\$317.22
Average Cost per Watershed Acre for 10 years	\$31.72

Other Non-District Costs:

1.	Culvert, Concrete Pipe, 3750D, Trenchless, 60" Dia., STA 49+50 - I-29 - Iowa Department of Transportation	170	LF	830.00	\$141,100.00
2.	Culvert, Corrugated Metal Roadway Pipe, 42" Dia. STA 88+00 - Barker Ave - Secondary Roads	60	LF	65.00	\$3,900.00
3.	Culvert, Concrete Pipe, 3750D, Trenchless, 60" Dia., STA 24+50 - D-51 - Secondary Roads	70	LF	830.00	\$58,100.00
4.	Wetland Mitigation - 50% Landowner for 4.4 AC				\$44,000.00